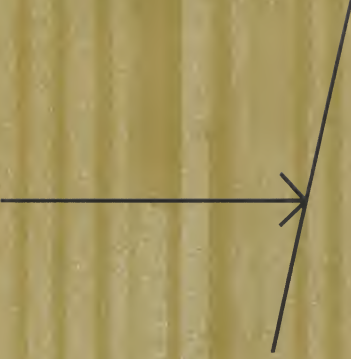




# TALLY®

## PAPER TAPE PERFORATORS AND READERS

### TALLY PERFORATED TAPE EQUIPMENT

Tally Corporation designs and manufactures paper tape readers, perforators, associated logic, and various systems incorporating these elements. Designed for simple, convenient operation and easy integration into larger systems, Tally products offer the best combination of reliability, performance, and economy on the market today.

Tally's family of electro-mechanical readers for low and medium speed applications find great usage as subsystems in numerically controlled machine tools, nuclear radiation analyzers and computer input/output. Because of the unique starwheel method of reading, Tally readers offer low tape wear and successfully read tape without regard to color, thickness or opacity.

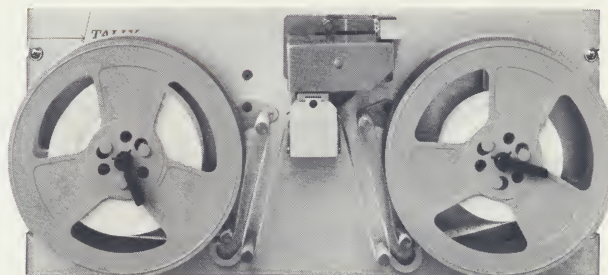
Tally paper tape perforators are designed to meet performance and price criteria for low, medium and high speed perforated tape systems. Tally perforators operate asynchronously up to 150 characters per second and provide self-checking error correction, parity checking, and bi-directional operation. Most significant perforator applications are found in high speed data logging, data transmission, nuclear analyzer systems, and paper tape verification systems for preparation of multiple tapes.

### MODEL P-120



The P-120 Perforator operates asynchronously up to 120 characters per second and accurately perforates paper, paper-Mylar and Mylar foils in thicknesses from .0025" to .0045". While the tape is being perforated, an optional error control can be exercised by either bit echo or checking odd or even parity. Integral tape supply and take-up reeling with a 1000 foot capacity are additional features of this compact, panel mounted perforator. Additional options include back space, low tape sensor, end of tape sensor, tape motion sensor, and 24 volt operation.

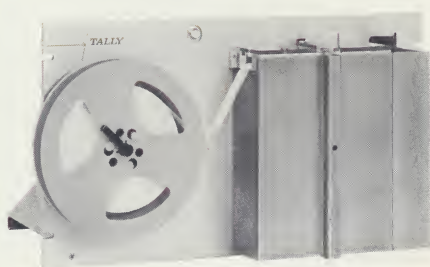
### MODEL 464



The Model 464 reads up to 120 characters per second in either direction. Available in both rack (with and without integral reeling) and console styles, the 464 reads 5, 6, 7 and 8 channels without modification. Form C contact switches and starwheel sensing provide positive hole/no hole circuit discipline which insures bit accountability.

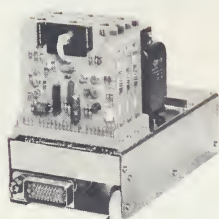


## MODEL 420



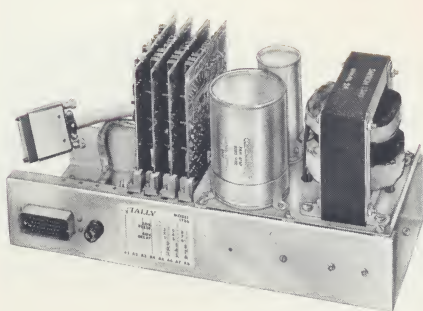
The self-contained Model 420 Perforator features integral supply and take-up reeling and operates asynchronously up to 60 characters per second. The bi-directional tape transport allows tape to be reversed to correct operation errors. The rack mounted unit perforates 5, 6, 7 or 8 levels interchangeably without modification. The eight-inch supply reel holds 1,000 feet of .004 inch paper tape.

## 1588 DRIVE PACKAGE



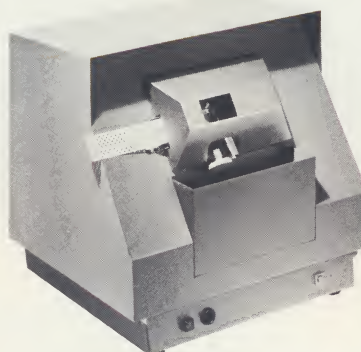
The Model 1588 is a transistorized drive package designed to operate the Model 420 perforator from low level logic signals.

## 1786 DRIVE PACKAGE



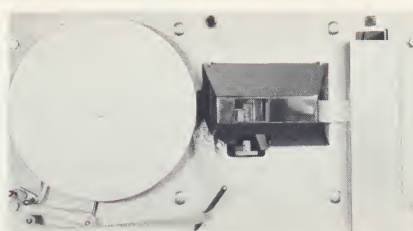
The Model 1786 is a transistorized drive package designed to operate the Model P-120 perforator from low level logic signals. Several options such as parity test, back space, and multichannel buzz are offered.

## MODEL P-30 CONSOLE



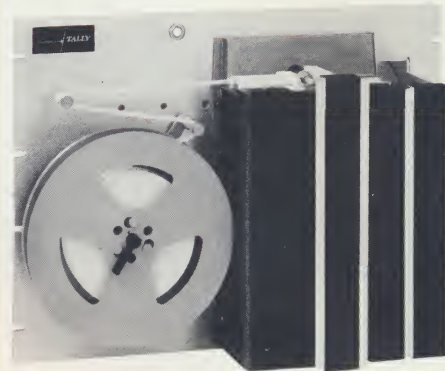
A new addition to Tally's line of perforators, the Model P-30 operates asynchronously up to 30 characters per second and will perforate 5, 6, 7 or 8 level tape. Integral take-up and supply reels have a 1000-foot tape capacity. Options include check back contacts on the punch head for checking parity and reverse feed capabilities.

## P-30 PANEL MOUNT



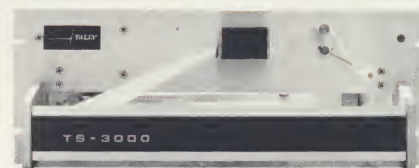
The P-30 panel mount style is readily adaptable to applications where space saving is an important factor. Operationally identical to the above console model, the perforator mechanism is mounted on a standard 19-inch anodized finished panel. The panel mount unit likewise incorporates an integral 1000-foot tape supply and take-up, low tape warning light, manual advance facilities and the above options.

## MODEL P-150A



The Model P-150A features a new design that includes integral reeling with 1,000 foot capacity in a high-speed panel mounted perforator. This is a 5, 6, 7 or 8 channel asynchronous machine that operates up to 150 characters per second and handles paper, paper-Mylar, and Mylar foils in thicknesses from .0025" to .0045". While the tape is being perforated, an optional error control can be exercised by either bit echo or checking odd or even parity. Additional options include back space, low tape sensor, and tape motion sensor.

## TS-3000 TAPE SUPPLY



The Tally Model TS-3000 Tape Supply is a rack mounted auxiliary unit ideally suited for use with high speed paper tape perforators. Compatible with all Tally perforators, the 3,000 foot tape capacity unit mounts below the perforator and feeds tape at random speeds up to 150 characters per second.

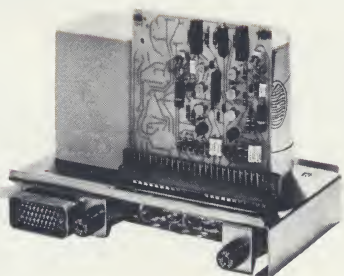


## MODEL 424



Bi-directional and asynchronous, the 424 reads up to 60 characters per second. Long life reading is achieved by starwheel actuated contacts in a Form C configuration which sense either the absence or presence of tape holes. Available in both console and panel mounted (with or without integral reeling) styles, the Model 424 reads 5, 6, 7 or 8 channels without modification.

## 1440B DRIVE PACKAGE

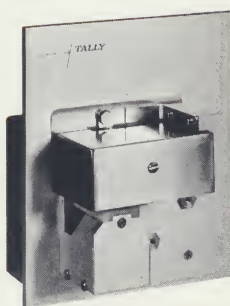


The Model 1440B bi-directional transistor drive package is designed for use with either a Model 424 or Model 464 reader. The driver, needing only a low level input, supplies escapement coil drive pulses of the proper amplitude and duration to the reader. The 1440B drives both forward and reverse escapement coils.

## 1443B DRIVE PACKAGE

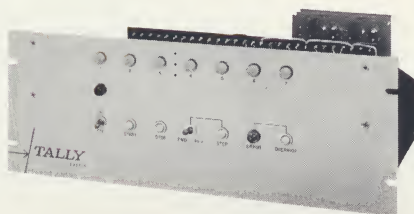
The 1443B is a uni-directional transistorized drive package incorporating the same specifications as the 1440B only this unit drives the forward escapement coil only.

## MODEL 625



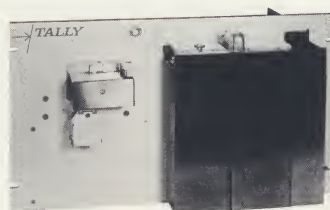
Where your application calls for a moderate-speed reader, the highly reliable Model 625 reads asynchronously up to 25 characters per second. The read head is the same as used in the Model 424 and 464 readers.

## MODEL 1470



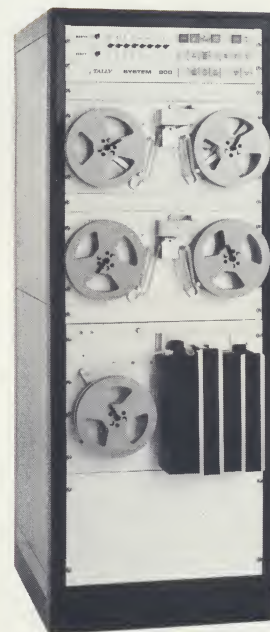
The Model 1470 reader/typewriter control offers off-line printout of numeric data when used with an IBM Model B typewriter. The input to the 1470 is a model 424 reader. Available features include parity checking and line length format control.

## MODEL 1477



The Model 1477 is a compact combination of a Model 420 perforator and a Model 424 reader. It finds application where a complete read/check operation of the punched data is desired. Also, it provides punch and read functions in minimal rack space. The combination is mounted on a standard 19" x 10½" panel.

## SYSTEM 800



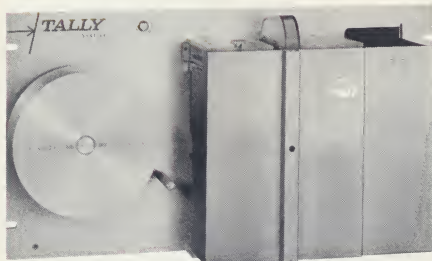
The Tally System 800 is an extremely versatile unit which provides economical verification/duplication of paper tapes from one through eight channels in any code structure at a speed of 120 characters per second. The outstanding feature of this unit is bit echo post punch verification of the character being perforated. Errors can be manually corrected by use of bit insert switches. Parity, blank/delete skip, and tape motion sensing are available as options.

## MARK 20

Similar in appearance to the above System 800, the Mark 20 provides economical verification/duplication of paper tapes from one through eight channels in any code structure at a speed of 60 characters per second. The unit has three basic modes of operation: direct reproduction of a master tape; comparison of two tapes bit for bit to insure that both tapes are identical; and comparison of two tapes bit for bit while perforating a third tape simultaneously. Parity checking and blank/delete skip are available as options.

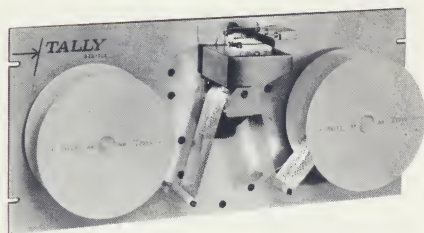


## MODEL 820



The 16-channel Model 820 Perforator punches tape asynchronously at speeds up to 40 characters per second. Units are available that utilize 1.78", 1.90", 2.00" and 2.125" tape widths. Built on a 19" wide x 10½" high x ¼" thick panel, the mechanism extends 6" to the front and 10" to the rear of the panel. The 8½" supply reel is integral with the panel as well as the take-up reel which provides for 400 feet of tape using 6" reels.

## MODEL 824



The Model 824 16-channel reader series is completely asynchronous, operating at speeds up to 60 characters per second in either direction. It is capable of reading punched tapes of 1.78", 1.90", 2.00" and 2.125" wide. The unit is panel mounted with integral six inch reeling.

## MODEL 1463

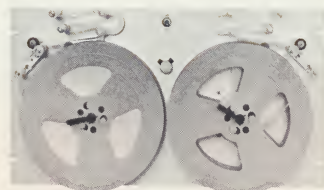


The Model 1463 Tape Handler is a rack mounted panel unit utilizing two reeling mechanisms. Mounted on a 19" x 8¾" panel, the unit is designed for use with any reader or perforator using one inch, ¼" or ⅞" tape at speeds up to 60 characters per second. Drive is supplied by a 1/30 HP/1650 RPM motor. Various reel size options are available.

## MODEL 1464

Similar to the 1463 in appearance and operation, the Model 1464 has provisions for supplying tape to readers and perforators with 120 character per second capabilities. The reeling mechanism is controlled by a tape tension arm which under tight tape releases drive power to the mechanism stopping the reeling action. Various reel size options are available.

## TH-105 TAPE HANDLER



The Tally Model TH-105 Tape Handler automatically pays out tape bi-directionally to a reader running at any speed up to 150 characters per second. The unit will also rewind tape from one reel to another under its own power at 40 inches per second. The unit is mounted on a brush finished aluminum panel measuring 19"w x 10½"h.

## 1535-A TESTER



The Model 1535-A Portable Tester provides all the necessary power supplies for testing Tally tape perforators and readers. The Model 1535-A supplies calibrated delays and timing markers eliminating the need for a high precision oscilloscope. An adapter cable is available for units requiring 230 volts at 50 cycles.

## 1535 TESTER

The Model 1535 Tester provides the same functions as the above portable model, except this unit is designed to be rack mounted.

## RT-4000 TESTER

The Tally Model RT-4000 Portable Tester is designed to test the Tally 400 series of readers which use Form "C" contacts. Special adapters are available for testing Form "A" contact readers, the 420, 575, and P-120 perforators, the 1588 and 1786 perforator drivers, and the 625 reader.

For convenience, the tester is housed in a plastic carrying case measuring 7" x 10¾" x 16". Space is provided in the case for storing five adapters and three detachable cables.

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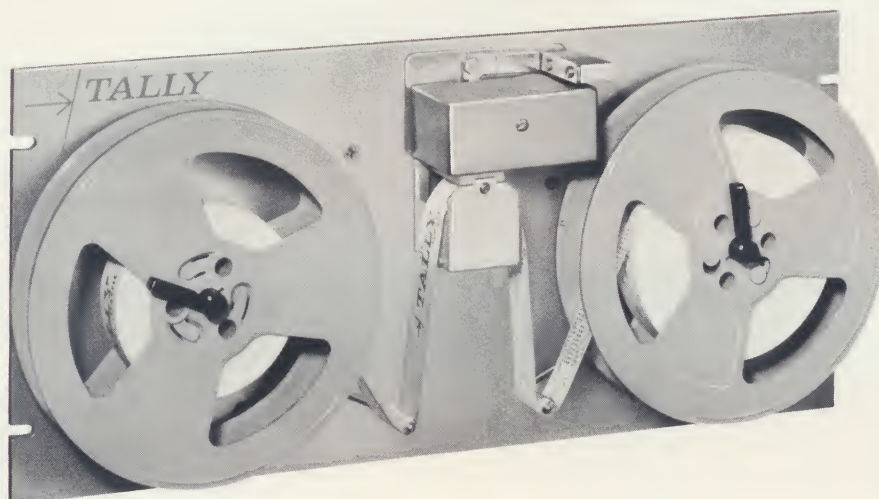
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# TALLY®

## BI-DIRECTIONAL PAPER TAPE READERS

Model **424**  
and Model **464**



### FEATURES

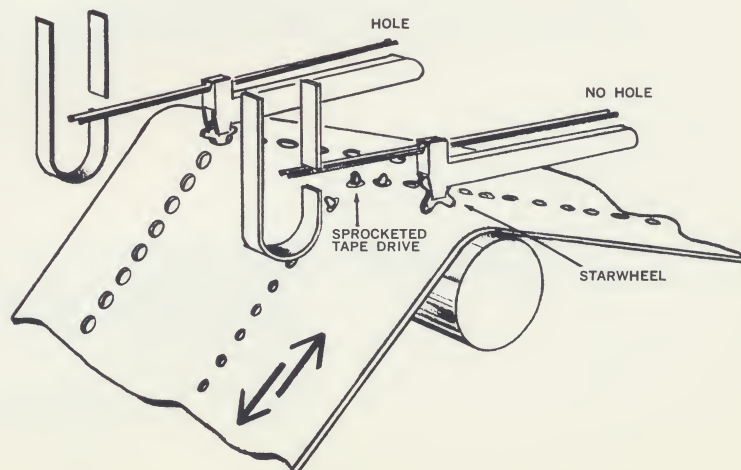
- Model 424 reads up to 60 characters per second in either direction—reversible in  $16\frac{2}{3}$  ms max.; Model 464 reads up to 120 characters per second in either direction—reversible in  $8\frac{1}{3}$  ms max.
- Triggered tape feed readout...rate controlled by external equipment.
- Full accountability. Form C switch provides positive hole/space identification.
- Reads 5, 6, 7, or 8 channels without modification.
- Model 424 can be slaved to any other device operating at speeds up to 60 characters per second; Model 464 up to 120 characters per second.

**BASIC DESIGN** The Tally Models 424 and 464 Paper Tape Readers offer a new low cost approach to rapid search and extraction of information from punched paper tape. The two readers are essentially similar except in their timing and maximum speed. Both self contained, these unique bi-directional asynchronous readers are available in both rack and console styles.

Key to long life high accuracy operation is the rugged reading mechanism illustrated below. Both the absence and presence of tape holes are sensed by star wheel actuated contacts in an SPDT configuration. To move tape, a pulse is applied to either of the two directional clutch assemblies. In normal usage, this pulse is used to interrogate and advance the tape for each character. Contact make or break always occurs after the expiration of the drive-interrogate pulse.

### APPLICATIONS

- Tape data assembly and conversion.
- Drives code converters, typewriters, digital to analog converters, data processing systems and digital computers.



Tally's Form C contact reader provides positive hole—no hole circuit discipline and allows introduction of bit accountability techniques.

## MODEL 424 SPECIFICATIONS

### OPERATING SPEED

Instantly variable from 0 to 60 characters per second, bi-directional

### STANDARD CODE CHANNELS

5, 6, 7, or 8

### CODE HOLE SIZE

0.072" diameter on standard 0.1" centers

### FEED HOLE SIZE

0.047" diameter

### ALIGNMENT

Code holes and feed holes have common center line

### STANDARD TAPE WIDTHS

0.687, 0.875, and 1.000 inches

### SUPPLY AND TAKE-UP

6" or 10" metal, or 7½" Lexan reels

### DRIVE MOTOR

105-125 v ac 60 cps at 0.6 amps 1/35 hp  
230 v, 50 cycle motor available

### TAPE DRIVE

4.5 ±0.5 millisecond pulse at 48 v dc ±10% applied to either directional clutch. 24 volt coils available on request. 48 volt coils are 220 ohms, 24 volt coils are 50 ohms.

### TAPE READ OUTPUT

Contacts are rated at 2 amps pulse gating or 5 ma live switching. Non-Ambiguous read condition is reflected at all times except for the switching period following a tape feed instruction.

### TERMINATION

Continental 250 Series, 34 pin connector. Mating connector supplied.

### DIMENSIONS

Model 424C—8½" W. x 4½" H. x 11¾" D.  
Shipping weight: 27 lbs.

Model 424P—19" W. x 8¾" H. x 8½" D.  
Shipping weight: 30 lbs.

Model 424PR—19" W. x 8¾" H. x 8½" D., no overhang with 6" reels, with 10" reels, overhang is 3" on side, 2" below panel.  
Shipping weight: 35 lbs.

## MODEL 464 SPECIFICATIONS

### OPERATING SPEED

Instantly variable from 0 to 120 characters per second, bi-directional.

### STANDARD CODE CHANNELS

5, 6, 7, or 8

### CODE HOLE SIZE

0.072" diameter on standard 0.1" centers

### FEED HOLE SIZE

0.047" diameter

### ALIGNMENT

Code holes and feed holes have common center line

### STANDARD TAPE WIDTHS

0.687, 0.875, and 1.000 inches

### SUPPLY AND TAKE-UP

6" metal or 7½" Lexan reels

### DRIVE MOTOR

1/12 hp, 115/230 v ac, 50/60 cps @ 1.1 amps (Requests for 50-cycle equipment must be stated at time of order.)

### TAPE DRIVE

3.0 ±0.5 ms pulse @ 24 v (33 ohm) or 48 v (118 ohm) dc ±10%

### TAPE READ OUTPUT

Contacts are rated at 2 amps pulse gating or 5 ma live switching. Non-ambiguous read condition is reflected at all times except for the switching period following a tape feed instruction.

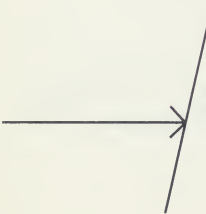
### TERMINATION

Continental 250 series, 34 pin connector. Mating connector supplied.

### DIMENSIONS

Model 464C—8½" W. x 4½" H. x 11¾" D.  
Shipping weight: 27 lbs.

Model 464PR—19" W. x 8¾" H. x 8½" D., no overhang with 6" reels.  
Shipping weight: 35 lbs.

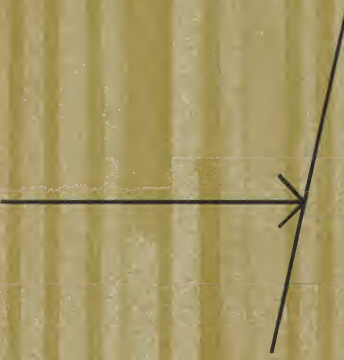
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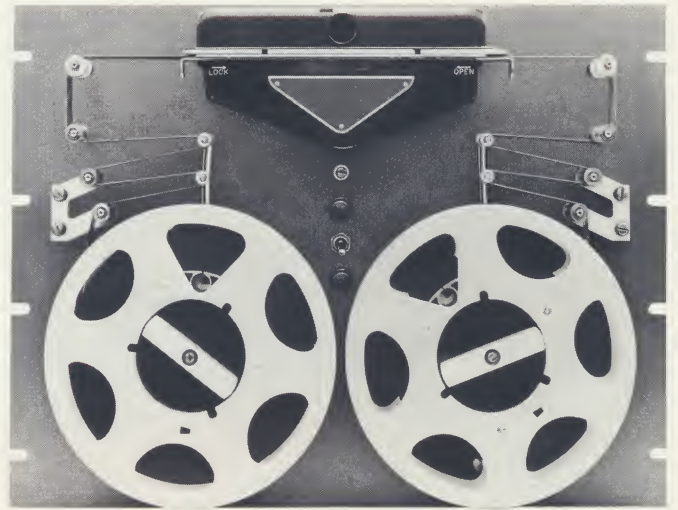
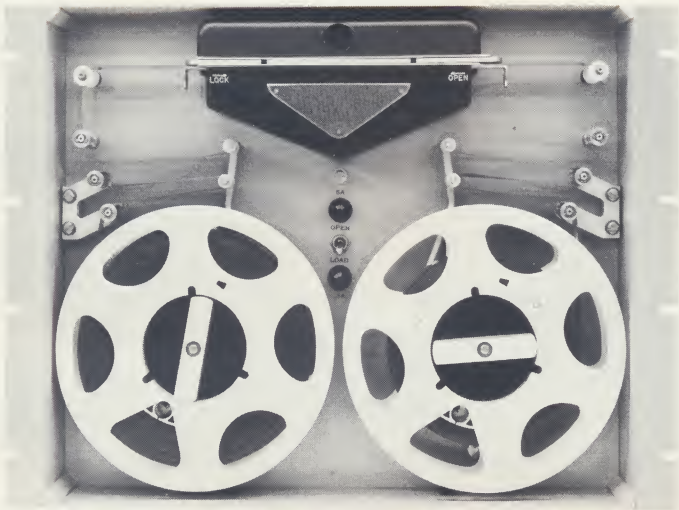




# TALLY®

## HIGH SPEED PHOTOELECTRIC TAPE READER

Model **500R** and **500RF**



### DESCRIPTION

The Tally Models 500R and 500RF Photoelectric Tape Readers offer bidirectional reading speeds from 100 to 500 characters per second synchronously and up to 200 characters per second asynchronously. In the wind/search mode, the unit operates at 1,000 characters per second.

Tally offers two models in this reader with integral tape handling configuration—the 500R and 500RF. The Model 500RF is identical in operation to the 500R except that its read head and tape handling are flush mounted rather than recessed from the mounting surface.

In recent reliability tests running the reader at maximum speed in the asynchronous mode, the 500 series performed over 15,000 hours without a misread. The service life is rated to be a minimum of 10,000 hours.

This dependable read head features silicon solar cell photoelectric light sensors for code and sprocket hole output. Quiet and reliable tape handling is achieved by the use of a proportional reel servo control in conjunction with printed circuit reel motors. The speed of the reel motors can be easily varied to meet the speed requirements of tape movement through the read head. Full servo control is maintained at any speed up to 1000 characters (100") per second.

## OPERATION

Tape movement through the read head is by means of a direct drive capstan utilizing a PMI printed motor. The tape is held against the capstan which is mounted directly on the shaft of the printed motor. No pinch rollers, friction brakes, clutches, or solenoids are used and no adjustments are required. Tape movement is started and stopped by current applied to the motor. Therefore, tape movement is in exact accordance with the rotation of the motor armature. Because of the high speed response of the printed motor, a great variety of reading operations can be obtained by merely controlling the current applied to the motor.

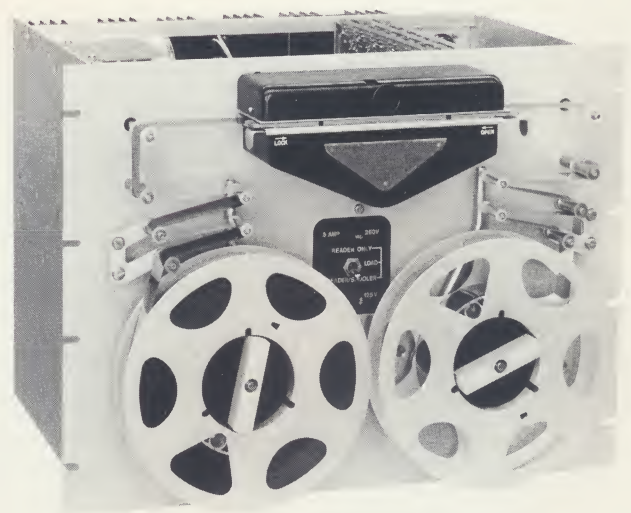
In asynchronous (character by character) reading, the motor advances the tape to the next character on receipt of an advance command from the external control equipment. A stop pulse is generated internally by the appearance of the sprocket hole of the next character. Reading speed can be varied by adjusting the frequency of the advance command pulses.

Reading speed in the synchronous (free running) mode can be set at any level from 100 to 500 characters per second. The stop pulse in this mode may be obtained from the tape or from an external source. On receipt of a stop command, the capstan will halt the tape before the next character.



500R

500RF





## SPECIFICATIONS—Model 500R and 500RF

### Reading Speed:

0 to 200 characters per second in the asynchronous (line-by-line) mode. Speed varies with the frequency of the start commands.

Up to 500 characters per second in the free-running (constant speed) mode. Reading speed may be set by a screwdriver adjustment at any required level between 100 and 500 characters per second.

1000 characters per second nominal in the Wind/Search mode.

### Reader Operation:

Bi-directional in all modes. All functions remotely controlled.

### Start Time:

3.5 milliseconds after start command to reach the next character.

### Stop Distance:

On stop character (.046") at 200 characters per second. Before next character (.080") at 500 characters per second. Within 5 characters (.500") at 1000 characters per second.

### Outputs:

Output polarities available are shown below. Outputs are clamped at 10 volts up to 5 milliamperes. Voltage levels will decrease if additional current is drawn. Timing pulse duration is  $35 \pm 10$  microseconds.

|              | Standard | Optional |      |      |
|--------------|----------|----------|------|------|
| HOLE         | -10V     | +10V     | 0V   | 0V   |
| NO HOLE      | 0V       | 0V       | +10V | -10V |
| SPROCKET     | -10V     | +10V     | 0V   | 0V   |
| TIMING PULSE | -10V     | +10V     | 0V   | 0V   |

### Control Logic:

"START" 6 to 12 volt level or pulse. Minimum pulse width of 30 microseconds. Maximum pulse rise time of 2 microseconds.

"STOP" same as for "Start."

"FORWARD" (read or wind right) 6 to 12 volt level, 20 milliwatts maximum at 6 volts.

"REVERSE" (read or wind left) same as for "Forward."

"WIND/SEARCH" 6 to 12 volt level, 30 milliwatts maximum at 6 volts.

### Power Requirements:

105 to 125 volts, single phase, 50-60 cps or 400 cps. Nominal power consumption is 350 watts.

### Tape Compatibility:

Paper, paper Mylar or metalized Mylar tapes with a maximum light transmission of 40% can be used. Tape can be 5, 6, 7 or 8 level,  $\frac{1}{16}$ ",  $\frac{7}{8}$ " or 1" wide.

### Tape Storage:

Eight-inch NARTB reels provided with captive knobs and expansion reel holders. Reel capacity is:  
1000 feet of tape .0025" thick  
650 feet of tape .0039" thick  
550 feet of tape .0046" thick

### Reel Servo Control:

Proportional reel servos vary the speed of the reel motors to meet the requirements of the capstan. Full servo control is maintained in the Wind/Search mode (1000 characters/second).

### Read Head:

Code and sprocket hole outputs are provided by silicon solar cell photoelectric light sensors. The read head is protected against dirt build-up.

### Code Hole Amplifiers:

The code hole amplifiers are contained on plug-in printed circuit boards with individual gain controls for each channel.

### Connectors:

AC Input—3 pin. Mating Connector MS3106A-14S-1S.

Control Input—14 pin. Mating Connector MS3106A-20-27S.

Output—10 pin. Mating Connector MS3106A-18-1P.

### Protective Devices:

Reel power supply—8A fuse.

Reader power supply—5A fuse.

No-Tape Switch—Reel and capstan drive become inoperative at end of reel or in case of tape breakage. A "No-Tape" signal is available in the Control Connector.

### Temperature Range:

Operating temperature range 0° to 52°C. (32° to 125°F.).

### Duty Cycle:

100% in any mode except maximum asynchronous rate. Duty cycle in this mode should be calculated by factory.

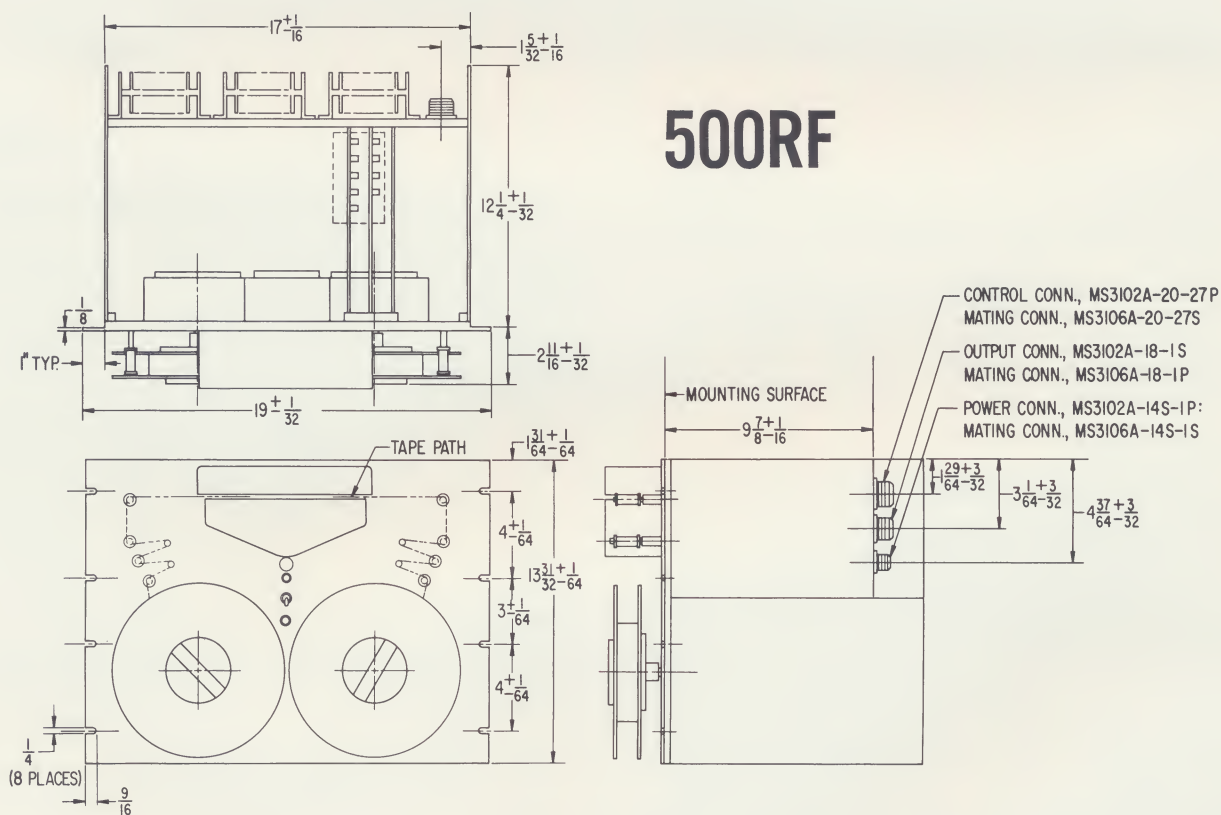
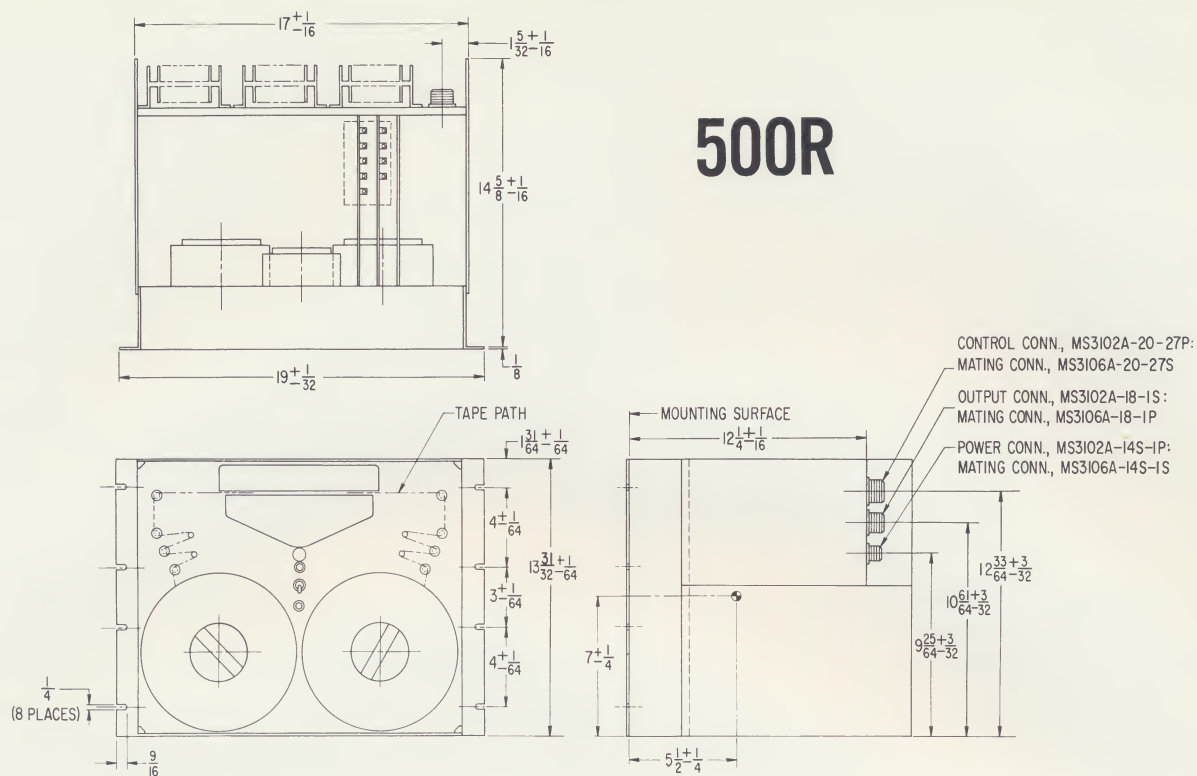
### Service Life:

10,000 hours, minimum life expectancy.

### Weight:

71 pounds.





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penna. 19107



What's the next best thing  
to having a full-time data  
communications consultant  
on our staff?

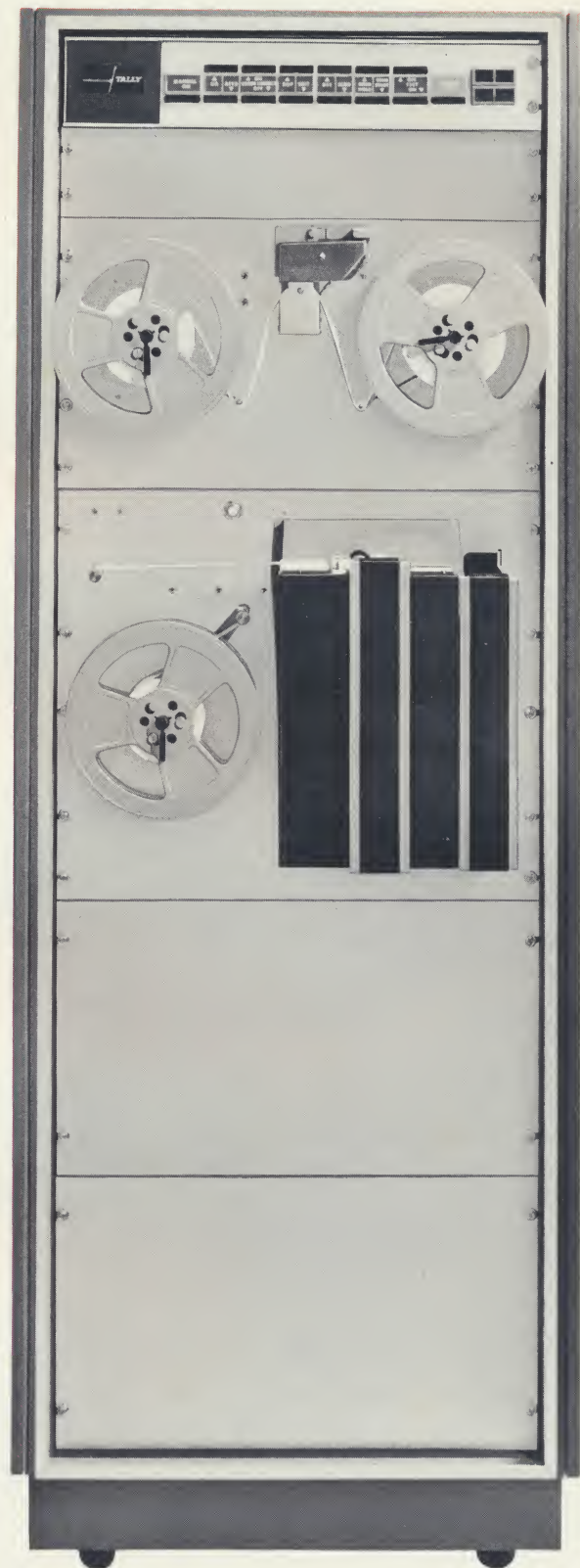


Mr. T. Nelson  
Systems Consultant  
P.O. Box 1546  
Poughkeepsie, NY 12603



THIRD CLASS FORM 3547 REQUESTED

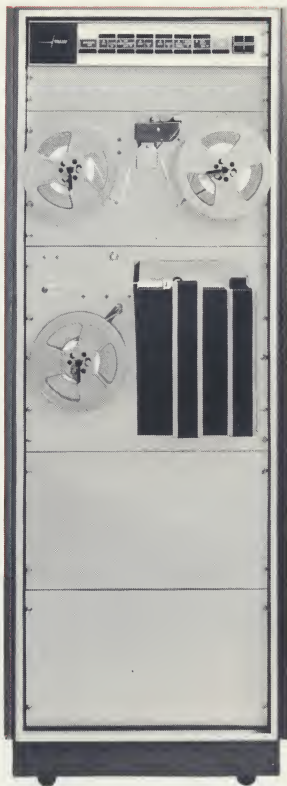
The Tally System 311 Send/Receive Terminal is the most versatile perforated tape data station available. It transmits or receives data at speeds of 1200 words per minute over ordinary dial telephone lines, will operate completely unattended, detects and deletes errors, and can be used for off-line tape duplication and editing in its spare time.



**TALLY®**

**BUSINESS COMMUNICATIONS SYSTEM 311 SEND / RECEIVE TERMINAL**





No operator need be present to send or receive data with the System 311. It answers incoming calls, verifies that an authorized transmitter or receiver is calling, and sends or receives the data. At completion, it hangs up the call and turns itself off. This capability permits a central data processing facility to handle communications during nonworking hours and have the data processed by the following morning.

When used in conjunction with System 111 transmitters, System 211 receivers, or with another System 311 terminal, the unique error detection and control capabilities are provided. When transmitting data tapes with parity included, the System 311 will stop only if the receiver signals an error. It then instantly reverses the data tape to a "block" character and retransmits that block of data. Conversely, while receiving, if the System 311 detects a punching error, it will insert a flag character in the tape and signal the transmitter to reverse and retransmit that portion of the tape.

The resultant "flagged" blocks of data may be removed from the tape during a subsequent off-line duplicate edit operation on the System 311. Alternately, the computer or printout machine may be programmed to skip between error flag and block characters.

### Specifications—System 311

**Speed**—1200 words per minute (120 characters per second).

**Code Requirements**—Any code format may be used. For operation of the retransmit feature, either an odd parity or an even parity code format must be used.

**Block Character**—Any customer-specified character. Typically, a "skip restore" or "print restore" function is used. (Recognized as "Punch On".) Thirty characters minimum between block characters.

**Flag Character**—Any customer-specified character. Typically a "take skip" or "non print". (Recognized as "Punch Off".)

**Tape Requirements**—Five or eight level tape meeting proposed ASA specifications for paper tape. Tape may be paper, paper-Mylar sandwich, or aluminum-Mylar sandwich of any color or opacity.

**Tape Handling—Reader**—Supply and takeup for up to 750 feet of tape on 7½-inch plastic reels. Supply reel unwinds counterclockwise, take-up winds counterclockwise. Tape feeds through the reader from right to left, when facing the system, with the narrow three-hole edge of the tape out.

**Tape Handling—Perforator**—Supply of 1,000 feet of tape, take-up for 750 feet. Take-up reel winds clockwise. Narrow, three-hole edge of the tape is out.

**Power Requirements**—115 volt AC  $\pm$  10 volts, 60 cycle. Requires a separate three-wire grounded receptacle.

**Dimensions**—22 inches wide, 61 inches high, and 23 inches deep. Weight approximately 370 pounds.

**Data Set Required**—Bell System 202C-2 or equivalent. On private lines, requires 202D-2 or equivalent.

**Compatible Systems**—101, 201, 301, without error control; 111, 211, 311 with error control.

### OPTIONS:

1. Ability to receive from any 60 or 75 character-per-second Tally transmitter.
2. Overseas package including 230 volt, 50 cycle power and 600/1200 Baud Speed Selector.
3. Parity forming on five level tape.
4. Automatic block code generating.
5. 3000 foot perforator tape supply.

Specifications Subject to Change Without Notice.

**TALLY**

**TALLY CORPORATION** • 1310 MERCER STREET • SEATTLE, WASHINGTON 98109  
PHONE 206/624-0760 • TWX 910-444-2039 • TELEX 032-286 • CABLE: TALLY SEATTLE WASH

**DARTEX DIVISION** • 1222 East Pomona Street • Santa Ana, California 92707 • 714/542-1196

**TALLY/AUTOMATIC PUNCHED TAPE, LTD.** • 6a George Street, Croydon, Surrey, England • MUNICIPAL 6838

**TALLY EUROPE LTD.** • Radnor House, 1272 London Road, London S.W. 16, England • POLLARDS 9199

### REGIONAL OFFICES

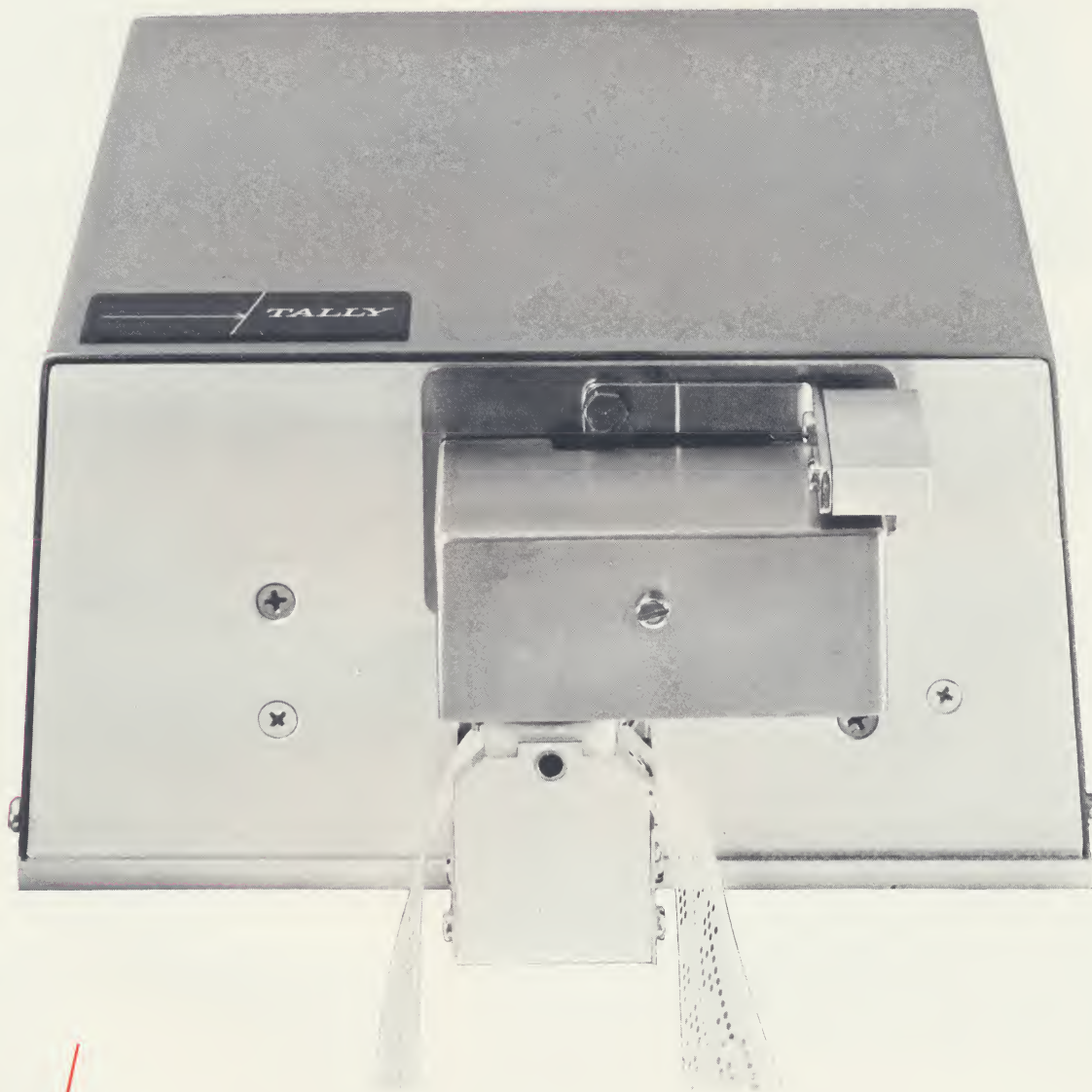
Tally Corporation, 45 N. Village Ave., Rockville Centre, N. Y. 11570 • 516/678-4220

Tally Corporation, 33 North Addison Road, Addison, Ill. 60101 • 312/279-9200

Tally Corporation, 1901 Ft. Myer Drive., Arlington, Va. 22209 • 703/525-8500

For high speed parallel transmission of data over ordinary dial-up telephone lines, the 720 word per minute Tally transmitters provide low cost, highly reliable data communi-

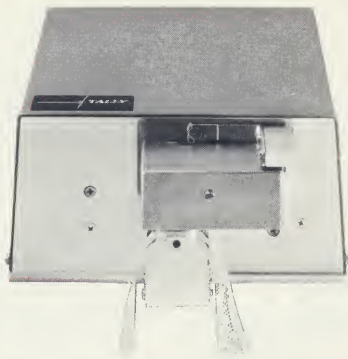
cations. These compact units all feature simple installation and easy operation. Unattended operation and automatic error correction are available.



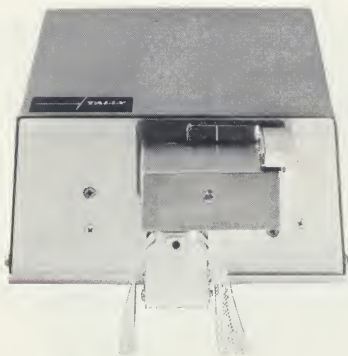
**TALLY®**

**BUSINESS COMMUNICATIONS SYSTEMS  
720 WORD PER MINUTE TRANSMITTERS**

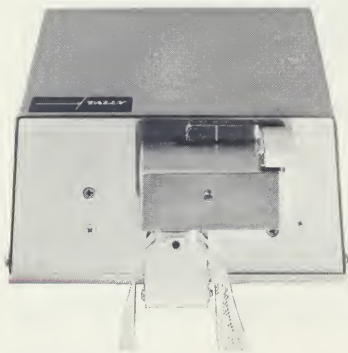




**SYSTEM 120:** Featuring manual operation only, this low cost unit is ideal for applications where error control is not essential, but the higher speed of 720 words per minute is desirable to minimize line costs.



**SYSTEM 122:** This system includes the added advantage of unattended operation. The System 122 can automatically answer an incoming call, verify that an authorized receiver is requesting data, and transmit its tape. At the end of the tape, the call is terminated automatically.



**SYSTEM 128:** This unit offers both unattended operation and automatic error correction capabilities. When an error is detected at the Receiver (System 228), the System 128 is automatically instructed to reverse its direction back to a "block character" in the tape and retransmit that portion of the data.

## OPERATION

In the manual mode of operation, the operator merely answers the incoming call and pushes the "data" button on his data set. In the unattended mode offered with Systems 122 and 128, incoming calls and transmission are handled automatically. With the unattended capability, a central data processing facility can poll various data sending sites during non-working hours and have the data processed by the following morning. All three units provide an end of tape sensor to automatically terminate a call.

## SPECIFICATIONS

**Speed:** 720 words per minute (72 characters per second).

**Code Requirements:** Any code format may be used.

For operation of the error control feature, either an odd parity or an even parity code format must be used.

**Tape Requirements:** Five or eight level tape meeting proposed ASA specifications for paper tape. Tape may be paper, paper-Mylar sandwich, or aluminum-Mylar sandwich of any color or opacity.

**Block Character:** (For System 128 Only) Any customer-specified character. Typically a "skip restore" or "print restore" function is used. Thirty characters minimum between block characters, 720 characters maximum.

**Power Requirements:** 115 volt AC  $\pm 10$  volts, 60 cycle. Requires a separate three-wire grounded receptacle.

**Dimensions:** 8 $\frac{3}{4}$  inches wide, 4 $\frac{3}{4}$  inches high, and 11 $\frac{1}{4}$  inches deep. Weight approximately eight pounds.

**Data Set Required:** System 120—Bell System 402A, or 402C, or equivalent

System 122—Bell System 402C, or equivalent

System 128—Bell System 402C-2, or equivalent

**Compatible System:** System 120—System 220 Receiver

System 122—System 220 Receiver

System 128—System 228 Receiver

**Tape Handling:** Separate tape handling units (Supply and Take-up) may be used when required.

**Options:** 230 volt AC; 50 cycle power.

**TALLY**

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Tally Corporation, 33 North Addison Road, Addison, Ill. 60101 • 312/279-9200  
Tally Corporation, 1901 Ft. Myer Drive., Arlington, Va. 22209 • 703/525-8500

# SYSTEMS PRICE LIST

Effective August 1, 1966

This supersedes all previous price lists

| 600 WORD PER MINUTE SYSTEMS                                                                                                                                                                                                                                                                            | Purchase Price        | SERVICE RATE |           | MONTHLY LEASE RATE |           |           |           |           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|-----------|--------------------|-----------|-----------|-----------|-----------|
|                                                                                                                                                                                                                                                                                                        |                       | Per Year     | Per Month | 24 Months          | 36 Months | 40 Months | 48 Months | 65 Months |
| TRANSMITTERS                                                                                                                                                                                                                                                                                           |                       |              |           |                    |           |           |           |           |
| SYSTEM 100—Used with 402A or 402C data set . . . . .                                                                                                                                                                                                                                                   | \$ 600                | \$ 48.00     | \$ 4.00   | \$ 27.90           | \$ 19.68  | \$ 18.00  | \$ 15.48  | \$ 12.00  |
| SYSTEM 102—Unattended operation. Used with 402C data set . . . . .                                                                                                                                                                                                                                     | 720                   | 57.60        | 4.80      | 33.48              | 23.62     | 21.60     | 18.58     | 14.40     |
| RECEIVERS                                                                                                                                                                                                                                                                                              |                       |              |           |                    |           |           |           |           |
| SYSTEM 200—Used with 402D data set. Includes tape reeling. Options include floor console, 3000' tape supply. (Option prices below) . . . . .                                                                                                                                                           | 1965                  | 108.00       | 15.00     | 91.37              | 64.45     | 58.95     | 50.70     | 39.30     |
| 720 WORD PER MINUTE SYSTEMS                                                                                                                                                                                                                                                                            |                       |              |           |                    |           |           |           |           |
| TRANSMITTERS                                                                                                                                                                                                                                                                                           |                       |              |           |                    |           |           |           |           |
| SYSTEM 128—Unattended operation and retransmit capability for error control. Used with 402C-2 data set . . . . .                                                                                                                                                                                       | 960                   | 76.80        | 6.40      | 44.64              | 31.49     | 28.80     | 24.77     | 19.20     |
| RECEIVERS                                                                                                                                                                                                                                                                                              |                       |              |           |                    |           |           |           |           |
| SYSTEM 220—Unattended receiving or controls unattended transmitter (System 102). Used with 402D data set. Includes tape reeling. Options include error detection, floor console, 3000' tape supply. (Option prices below) . . . . .                                                                    | 2935                  | 216.00       | 18.00     | 136.48             | 96.27     | 88.05     | 75.72     | 58.70     |
| SYSTEM 228—Unattended receiving or control of unattended error correcting transmitter (System 128). Automatic error detection and retransmission control. Used with 402D-2 data set. Includes tape reeling. Options include floor console and 3000' tape supply. (Option prices below) . . . . .       | 3880                  | 228.00       | 19.00     | 180.42             | 127.26    | 116.40    | 100.10    | 77.60     |
| SPECIAL SYSTEMS                                                                                                                                                                                                                                                                                        |                       |              |           |                    |           |           |           |           |
| MAGNETIC TAPE/PAPER TAPE CONVERSION SYSTEMS                                                                                                                                                                                                                                                            |                       |              |           |                    |           |           |           |           |
| SYSTEM 600—Built to customer specifications. Features available include paper to magnetic and magnetic to paper tape conversion; any code to any code translation; variable length to fixed length record conversion; tape duplication; parity checking; speeds to 120 characters per second . . . . . | Basic Price<br>19,200 | 1920.00      | 160.00    | 892.80             | 629.76    | 576.00    | 495.36    | 384.00    |
| SYSTEM 700—Same as System 600 with addition of data communications. Transmits from paper or magnetic tape. Receives on paper or magnetic tape. Speeds to 120 characters per second . . . . .                                                                                                           | 24,600                | 2460.00      | 205.00    | 1143.90            | 806.88    | 738.00    | 634.68    | 492.00    |
| OPTIONS                                                                                                                                                                                                                                                                                                |                       |              |           |                    |           |           |           |           |
| 1. Error Detection . . . . .                                                                                                                                                                                                                                                                           | 500                   | 42.00        | 3.50      | 23.25              | 16.40     | 15.00     | 12.90     | 10.00     |
| 2. Free Standing Floor Console . . . . .                                                                                                                                                                                                                                                               | 150                   | N/C          | N/C       | 6.98               | 4.92      | 4.50      | 3.87      | 3.00      |
| 3. 3000 Foot Perforator Tape Supply . . . . .<br>(Requires free-standing floor console.)                                                                                                                                                                                                               | 375                   | 30.00        | 2.50      | 17.44              | 12.30     | 11.25     | 9.68      | 7.50      |

## ACCESSORIES (Purchase only)

|                                                                                                                      |         |
|----------------------------------------------------------------------------------------------------------------------|---------|
| Standard Tally 7½" tape reel Part #519950 . . . . .                                                                  | \$ 3.00 |
| Plastic reel adapter for mounting above reel on other equipment                                                      |         |
| (1) Part #229490 (Mounts on ¼" shaft) . . . . .                                                                      | 5.00    |
| (2) Part #341130 (Mounts on ⅝" shaft) . . . . .                                                                      | 6.25    |
| Adapter Core—Increases inside diameter of tape wound on above reel to 3¼" for use on center feed unwinders . . . . . | 6.00    |
| Manual tape punch for editing and splicing tape. #4042000 . . . . .                                                  | 50.00   |

## PAPER TAPE

1" Wide, oiled, printed "Tally." 1000', 28 Rolls per case, #317460. 3000', 9 Rolls per case, #349360.

| Quantity                       | 1000'   | 3000'   |
|--------------------------------|---------|---------|
| Per roll . . . . .             | \$ 1.50 | \$ 4.32 |
| Per case, 1-5 . . . . .        | 33.00   | 30.60   |
| Per case, 6-19 . . . . .       | 30.00   | 27.72   |
| Per case, 20 or more . . . . . | 27.00   | 25.38   |

**TALLY®**

**BUSINESS COMMUNICATION SYSTEMS PRICE LIST**



## 1200 WORD PER MINUTE SYSTEMS

All Tally 1200 WPM systems operate with the Bell System 202C-2 data set or equivalent. When ordering the data set from your local telephone company, be sure to specify the following options: (1) Bit rate over 900; (2) EIA interface; (3) Permanent unattended answering; (4) Reverse channel.

|                                                                                                                                                                                                                                                                                                                                                                                                                                  | Purchase Price | SERVICE RATE |           | MONTHLY LEASE RATE |           |           |           |           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------|-----------|--------------------|-----------|-----------|-----------|-----------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                  |                | Per Year     | Per Month | 24 Months          | 36 Months | 40 Months | 48 Months | 65 Months |
| TRANSMITTERS                                                                                                                                                                                                                                                                                                                                                                                                                     |                |              |           |                    |           |           |           |           |
| SYSTEM 101—Unattended operation. Includes tape reeling. Options include floor console; 600/1200 WPM speed selection. (Option prices below) . . .                                                                                                                                                                                                                                                                                 | \$ 1540        | \$150.00     | \$ 12.50  | \$ 71.61           | \$ 50.51  | \$ 46.20  | \$ 39.73  | \$ 30.80  |
| SYSTEM 111—Unattended operation and retransmit capability for error control. Includes tape reeling. Options include floor console; 600/1200 WPM speed selection; parity forming; block code forming. (Option prices below) . . . . .                                                                                                                                                                                             | 2040           | 180.00       | 15.00     | 94.86              | 66.91     | 61.20     | 52.63     | 40.80     |
| RECEIVERS                                                                                                                                                                                                                                                                                                                                                                                                                        |                |              |           |                    |           |           |           |           |
| SYSTEM 201—Unattended operation. Includes tape reeling. Options include floor console; receive compatibility with systems 100, 102, 128; 600/1200 WPM speed selection; 3000' tape supply. (Option prices below) . . . . .                                                                                                                                                                                                        | 4520           | 240.00       | 20.00     | 210.18             | 148.26    | 135.60    | 116.62    | 90.40     |
| SYSTEM 211—Unattended operation. Detects errors and controls retransmission. Includes tape reeling. Options include floor console; receive compatibility with Systems 100, 102, 128; 600/1200 WPM speed selection; 3000' tape supply. (Option prices below) . . . . .                                                                                                                                                            | 5200           | 270.00       | 22.50     | 241.80             | 170.56    | 156.00    | 134.16    | 104.00    |
| COMBINATION TRANSMIT/RECEIVE SYSTEMS                                                                                                                                                                                                                                                                                                                                                                                             |                |              |           |                    |           |           |           |           |
| SYSTEM 301—Unattended operation. Offline tape duplication. Includes complete tape reeling. Options include receive compatibility with Systems 100, 102, 128; 600/1200 WPM speed selection; 3000' tape supply; typewriter. (Option prices below) .                                                                                                                                                                                | 6520           | 300.00       | 25.00     | 303.18             | 213.86    | 195.60    | 168.22    | 130.40    |
| SYSTEM 311—Unattended operation. Sender has retransmit capability for error control. Receiver detects errors and controls retransmission. Off line tape duplication and editing. Includes complete tape reeling. Options include receive compatibility with Systems 100, 102, 128; 600/1200 WPM speed selection; parity forming; block code forming; 3000' tape supply; typewriter; card reader. (Option prices below) . . . . . | 7190           | 336.00       | 28.00     | 334.34             | 235.83    | 215.70    | 185.50    | 143.80    |
| OPTIONS                                                                                                                                                                                                                                                                                                                                                                                                                          |                |              |           |                    |           |           |           |           |
| 1. Free Standing Floor Console . . . . .                                                                                                                                                                                                                                                                                                                                                                                         | 150            | N/C          | N/C       | 6.98               | 4.92      | 4.50      | 3.87      | 3.00      |
| 2. Receive Compatibility with Systems 100, 102, 128 . . .                                                                                                                                                                                                                                                                                                                                                                        | 75             | 12.00        | 1.00      | 3.49               | 2.46      | 2.25      | 1.94      | 1.50      |
| 3. 600/1200 WPM speed selection . . . . .                                                                                                                                                                                                                                                                                                                                                                                        | 150            | 24.00        | 2.00      | 6.98               | 4.92      | 4.50      | 3.87      | 3.00      |
| 4. Parity Forming . . . . .                                                                                                                                                                                                                                                                                                                                                                                                      | 600            | 48.00        | 4.00      | 27.90              | 19.68     | 18.00     | 15.48     | 12.00     |
| 5. Block Code Forming . . . . .                                                                                                                                                                                                                                                                                                                                                                                                  | 600            | 48.00        | 4.00      | 27.90              | 19.68     | 18.00     | 15.48     | 12.00     |
| 6. 3000 Foot Perforator Tape Supply . . . . .<br>(Available only in systems installed in free standing floor console)                                                                                                                                                                                                                                                                                                            | 375            | 30.00        | 2.50      | 17.44              | 12.30     | 11.25     | 9.68      | 7.50      |
| 7. Typewriter . . . . .                                                                                                                                                                                                                                                                                                                                                                                                          | 2800           | 240.00       | 20.00     | 130.20             | 91.84     | 84.00     | 72.24     | 56.00     |
| 8. Card Reader . . . . .                                                                                                                                                                                                                                                                                                                                                                                                         | 2800           | 240.00       | 20.00     | 130.20             | 91.84     | 84.00     | 72.24     | 56.00     |

### INSTALLATION

All Tally Systems are installed at no charge to the customer, whether leased or purchased.

### SERVICE

Nationwide service is provided by Tally. In addition, Tally maintains a data communications test center in Seattle for on line testing.

This test service is available free of charge to all Tally Systems customers.

Service is provided through a service contract or on a per call basis.


**TALLY**

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The Tally system is easy to use and simple to install. Merely plug the system into a corresponding data set. The data set enables the Tally system to "talk" over ordinary dial telephone lines by

converting electrical pulses into audible tones. The Tally compatibility chart indicates the required data set for each Tally system; also, it shows the usual combinations between Tally transmitters and receivers.

**PARALLEL SYSTEMS (600/720 WORDS PER MINUTE)**

| System                               |                     | 200<br>Receive<br>(600 WPM)  | 220<br>Receive<br>(Up to 720 WPM)                      | 228<br>Receive<br>(Up to 720 WPM)      | 300<br>Send/<br>Receive<br>(600 WPM) |
|--------------------------------------|---------------------|------------------------------|--------------------------------------------------------|----------------------------------------|--------------------------------------|
|                                      | Data<br>Set         | 402D                         | 402D                                                   | 402D-2                                 | 402C<br>and<br>402D                  |
| 100<br>Sender<br>(600 WPM)           | 402A<br>or<br>402C  | Normal<br>Configu-<br>ration | Attended<br>Transmission<br>or Unattended<br>Receiving | Without<br>Error<br>Correction<br>Only | Normal<br>Configu-<br>ration         |
| 102<br>Sender<br>(600 WPM)           | 402C                |                              | Normal<br>Configu-<br>ration                           | Without<br>Error<br>Correction<br>Only |                                      |
| 128<br>Sender<br>(720 WPM)           | 402C-2              |                              |                                                        | Normal<br>Configu-<br>ration           |                                      |
| 300<br>Send/<br>Receive<br>(600 WPM) | 402C<br>and<br>402D | Normal<br>Configu-<br>ration | Attended<br>Transmission<br>or Unattended<br>Receiving | Without<br>Error<br>Correction<br>Only | Normal<br>Configu-<br>ration         |

**SERIAL SYSTEMS (1200 WORDS PER MINUTE)**

| System                  |             | 201<br>Receive                 | 211<br>Receive                 | 301<br>Send/<br>Receive        | 311<br>Send/<br>Receive        |
|-------------------------|-------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
|                         | Data<br>Set | 202C-2                         | 202C-2                         | 202C-2                         | 202C-2                         |
| 101<br>Sender           | 202C-2      | Normal<br>Configu-<br>ration   | Without<br>Error<br>Correction | Normal<br>Configu-<br>ration   | Without<br>Error<br>Correction |
| 111<br>Sender           | 202C-2      | Without<br>Error<br>Correction | Normal<br>Configu-<br>ration   | Without<br>Error<br>Correction | Normal<br>Configu-<br>ration   |
| 301<br>Send/<br>Receive | 202C-2      | Normal<br>Configu-<br>ration   | Without<br>Error<br>Correction | Normal<br>Configu-<br>ration   | Without<br>Error<br>Correction |
| 311<br>Send/<br>Receive | 202C-2      | Without<br>Error<br>Correction | Normal<br>Configu-<br>ration   | Without<br>Error<br>Correction | Normal<br>Configu-<br>ration   |

(See opposite side for other compatible serial data sets)

**TALLY®**

**BUSINESS COMMUNICATION SYSTEMS INFORMATION**